SPEEDWAY COMPRESSOR

Operating Manual

Model:

07654

DANGER!

Breathable Air Warning

This compressor/pump is NOT equipped and should NOT be used "as is" to supply breathing quality air. For any application of air for human consumption, you must fit the air compressor/pump with suitable in-line safety and alarm equipment. This additional equipment is necessary to properly filter and purify the air to meet minimal specifications for Grade D breathing as described in Compressed Gas Association Commodity Specification G 7.1 – 1966, OSHA 29 CFR 1910. 134, and/or Canadian Standards Associations (CSA)

DISCLAIMER OF WARRANTIES

In the event the compressor is used for the purpose of breathing air application and proper in-line safety and alarm equipment is not simultaneously used, existing warranties are void, and EMAX Air Force Technology disclaims any liability whatsoever for any loss, personal injury or damage.

CALIFORNIA PROPOSITION 65

WARNING!

This product or its power cord may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

- **READ INSTRUCTION MANUAL BEFORE OPERATING**
- **RISK OF FIRE OR EXPLOSION** – DO NOT SPRAY COMBUSTIBLE/FLAMMABLE LIQUID IN A CONFINED AREA. SPRAY AREA MUST BE WELL VENTILATED. DO NOT SMOKE WHILE SPRAYING OR SPRAY WHERE SPARK OR FLAME IS PRESENT. ARCING PARTS – KEEP COMPRESSOR AT LEAST 20 FEET AWAY FROM SPRAYING AREA AND ALL EXPLOSIVE VAPORS.
- **RISK OF INJURY** – DO NOT DIRECT AIR STREAM AT BODY. USE EYE PROTECTION. COMPRESSOR STARTS AUTOMATICALLY. MOVING PARTS. DO NOT TOUCH. KEEP GUARDS IN PLACE. COMPRESSOR DOES NOT SUPPLY BREATHABLE AIR.
- **RISK OF BURSTING** – DO NOT ADJUST REGULATOR TO RESULT IN OUTPUT PRESSURE GREATER THAN MARKED MAXIMUM PRESSURE OF ATTACHMENT. IF A REGULATOR HAS NOT BEEN INSTALLED - USE ONLY ATTACHMENT RATED AT 200 PSI OR HIGHER. DO NOT WELD ON OR REPAIR TANK – REPLACE. DO NOT OPERATE WITHOUT PROPER ASME SAFETY VALVE IN PLACE.
- **RISK OF ELECTRICAL SHOCK** – HAZARDOUS VOLTAGE: DISCONNECT FROM POWER SOURCE BEFORE SERVICING. COMPRESSOR MUST BE GROUNDED. DO NOT USE GROUNDING ADAPTORS. DO NOT EXPOSE TO RAIN. STORE INDOORS.

IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME-DELAY FUSE MARKED "D"

COMPLIES WITH CCR462 (L)(2).

DO NOT USE BELOW GARAGE FLOOR OR GRADE LEVEL

DRAIN TANK EVERYDAY TO PREVENT CORROSION AND POSSIBLE INJURY DUE TO TANK DAMAGE

Introduction

In order to receive maximum performance and long life from your compressor, the following instructions should be read carefully and all points regarding installation and operation of the unit should be noted and observed. Carefully reading this manual before connecting anything to the motor or compressor is necessary for optimum trouble-free operation.

Inspection

Check for possible damage from transit and test the pulley by turning it freely with your hands. **Report any damage to the delivery carrier immediately.**

Location

Select a clean, dry, and well-lit location. In cold climates, the compressor should be installed in a heated building. Insulate cold water or other low temperature pipes that pass overhead to avoid possible collection and dripping of condensate onto the compressor and motor that could cause rust and/or motor shorting. **Do not** install the compressor in a boiler room, paint spray room, or area where sandblasting occurs. If acid or dust is in the air where the compressor is operating, the compressor intake should be piped to the outside. This intake pipe should be increased one pipe size for every twenty (20) feet of run and the intake filter should be installed at the end of the pipes with a hood to protect them from the elements. **Special size** filters are required for pipe away.

If the compressor has to be located where the motor will be exposed to appreciable quantities of water, oil, dirt, acid, or alkaline fumes, the motor must be of special construction to avoid rapid deterioration; i.e. TEFC

Unless the base is exactly level, shims will probably be required. Any space between base and foot should be shimmed rather than drawing the foot down thus placing strain on the unit. When unit is properly shimmed, vibration will be at a minimum.

Allow sufficient space around the compressor so that it is accessible from all sides for maintenance. Mount the unit with the pulley towards the wall at least 18 inches between pulley & wall.

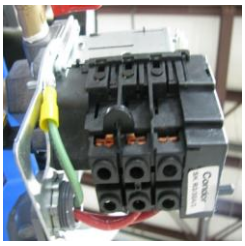
POWER SUPPLY AND WIRING

- **Installation should be executed by a licensed electrician**
- **All electrical connections must be tightened before starting. This includes connections at the motor junction as well as the Condor Switch or Magnetic starter. This shall include all factory connections. Repeat: Check all electrical connections before startup.**

Wiring should be installed by a licensed electrician who is familiar with requirements of the National Board of Fire Underwriters and of the local inspectors is recommended. Consult your local electrical contractor regarding electric codes and recommended wire sizes.

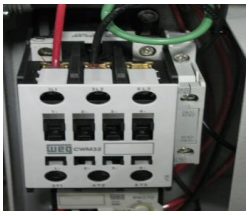
Single Phase Motors:

Hook your hot leads to the wiring terminals opposite of the motors wires. Hook one hot lead to 1L1. Another hot lead to 3L2. Hook ground wire to our ground wire.



Three Phase Motors:

Hook one hot lead to 1L1 lug, hook another to the 3L2 lug and then hook the third to 5L3. Run ground wire to our ground lug. Start compressor and check for rotation. If rotation is reversed, shut off power and switch two of the hot leads. This will reverse the polarity and the motor will run the opposite direction.



**Make sure that your power supply and internal wiring are adequate and that the available frequency and voltage correspond to the motor nameplate and starter. A 230 volt motor will not work sufficiently on a nominal 208 volt system. Even if the actual voltage is up to 208 volts, the 10-12 volt drop during start up (this is an average, but not a high figure for commercial buildings) may cause the motor to labor and blow fuses or heater elements. Do not accept the nominal figure for line voltage, but rather measure it with a voltmeter during a period of maximum power demand.

AIR INTAKE

The compressors are equipped with an intake filter that requires no piping. If it is necessary to pipe the intake to the outdoors, see Paragraph 3, “Location”.

PIPE CONNECTION

A flexible connector should be used between the compressor tank and the building piping or connection to after cooler or other similar equipment in order to minimize noise, vibration, vibration damage and wear and tear.

CAUTION

- Never install a shut-off valve (e.g. glove or gate valve) between the compressor discharge opening and the receiver unless a safety valve is installed in the line between this valve and the compressor.
- Never operate the pump at a pressure or a speed in excess of those recommended by the factory.

TANK

Tank feet should be placed on vibration isolator pads (1/4'' thick or less) available through your dealer. Anchor bolts should be gently snug, but not tight, to allow for vibration. Remember, the bolt is only a guide to hold the compressor in place. Do not over tighten the legs of the tank against the pads…it will damage your tank. Caution: Do not store tank on dirt or on an uneven surface. Over time, the tank will tilt causing pump failure from no lubrication.

STARTING

- Check oil level before starting. The oil should be in the center of the sight glass.
- Turn the compressor over a few revolutions by hand to make sure that everything is free.
- Check belt tension. (should be ½'' of play)
- Remove rags, tools, and any other objects from the vicinity of the compressor.
- Never put hands on the belts of an idle unit unless you are sure the main motor switch is off.
- Note the direction of the arrow stated on the belt guard and be sure rotation is the same direction when running. Correct direction is counter-clockwise when standing facing the flywheel. Air should be drawn through the intercooler onto the cylinders for maximum cooling.

OPERATION AND CARE

SERVICE

All units are shipped with break-in oil. Oil should be changed within the first 50 hours or 30 days of use (whichever comes first). Use a Mobil RARUS 427 which is available through your dealer or any non-detergent 30 weight air compressor oil. **WARNING!! DO NOT** use automotive type oil. REPEAT: **DO NOT USE AUTOMOTIVE TYPE OIL.**

- Oil should be changed every 90 days. Oil level should be halfway level in the sight glass.
- If oil is milky, and oil change will be required.
- Inspect air filters weekly and clean or change as needed.

BELT ADJUSTMENT

Always pull the motor disconnect switch before working on the belts so the motor cannot start up unexpectedly. When belt tension is adjusted properly, the belts can be depressed at a point midway between the motor pulley and the flywheel approximately one half inch. Loose belts will slip on the motor pulley and cause excessive heating and wear. A belt that is too tight will overload the bearings. Adjustments can be made by sliding the motor along its base. When installing new belts, it is necessary that the motor bolts be loosened and the motor moved toward the compressor. The new belts can be installed without damage or strain. Overtime belts stretch and it is recommended that all belts be changed at the same time. To adjust the belts loosen the four motor frame nuts and adjust the single bolt head on the belt tensioner. (Fig.1)

Fig. 1

DAILY CARE

- Check oil level in crankcase and, if necessary, add sufficient oil to bring to (but not above) halfway level in the sight glass (without the motor running).
- Drain moisture from air receiver.

- Stop, look, and listen for unusual noises, failure to compress, overheating, vibration, or belt slippage. Correct before damage occurs.

MONTHLY CARE

- Check and tighten all bolts as required.
- Check air connections and joints for air leaks.
- Check all unloading lines for air leaks. Air leaks in the unloading lines will cause the unloaders to chatter and could cause short cycling.
- Check “V” belts for any possible misalignment and tightness. See “Belt Adjustment”.

Maintenance-Trouble Shooting-Repairs

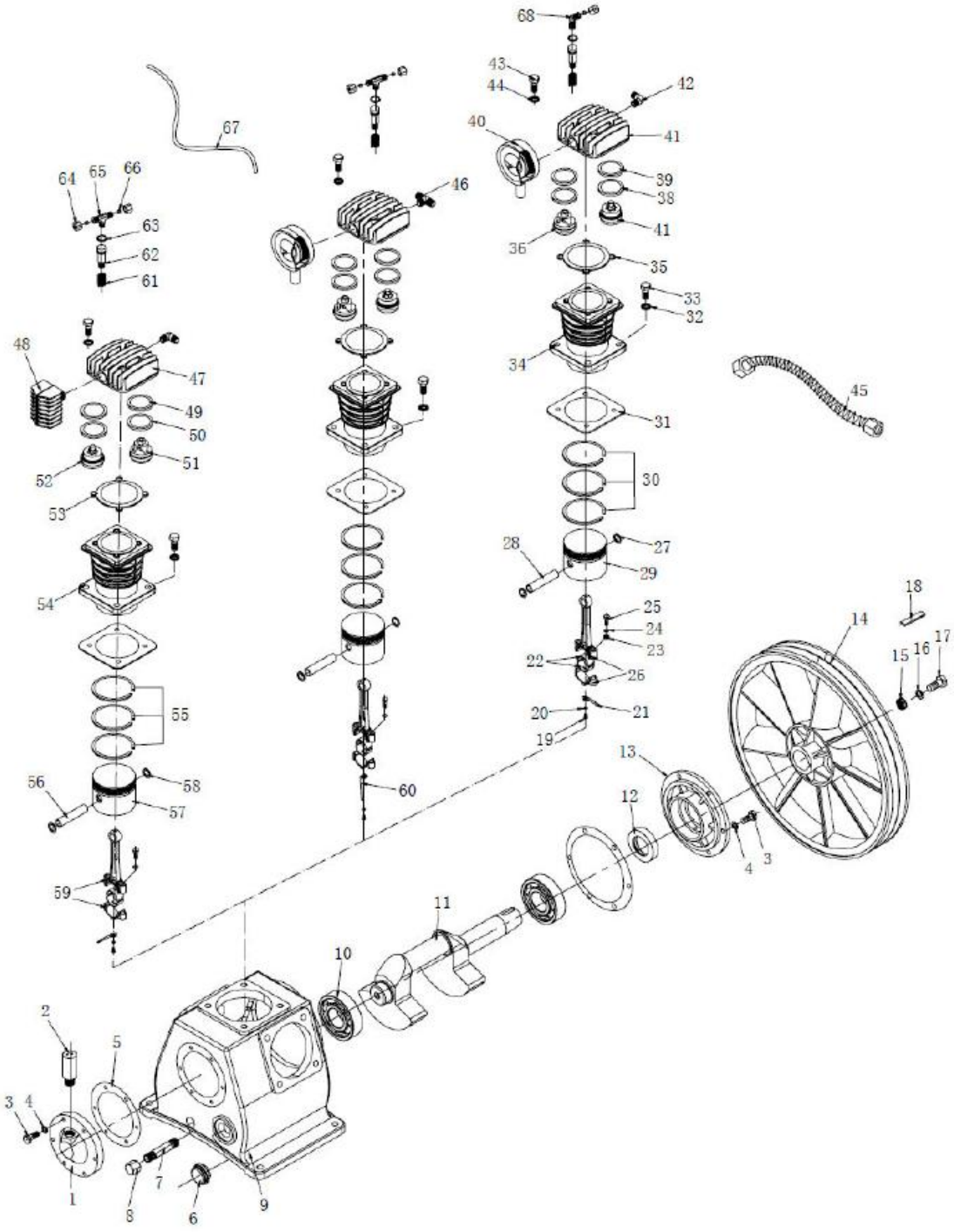
SLOW PUMPING OR INSUFFICIENT PRESSURE CAN BE CAUSED BY:

- Clogged inlet filter (disassemble and clean thoroughly).
- Leaks in air lines, valves, fittings, etc. (Locate by using soapy water if necessary; replace or tighten threaded parts).
- Compressor too small for equipment application. Check air requirements vs. compressor capacity and consult dealer.
- Leaking head valves (remove hold-down covers than remove valves for inspection. Repair or replace faulty valves).
- If the power network in the building is 208 volts, order a 208 volt motor. If the starting voltage is much less the 90% of the motor nameplate voltage, the motor cannot be expected to start and the interior building wiring must be corrected.

OVERHEATING

Compression of air generates heat, much of which is dissipated as air passes over the intercooler and/or after cooler. Overheating can be caused by:

- Pump running backwards (reverse direction). Proper rotation is counter-clockwise when facing the flywheel.
- One or more head valves are failing to seat properly.
- Blown cylinder head gasket.
- Restriction in head, intercooler, or check valve.
- Lack of oil (check oil level).
- Dirt in intercooler fins or cylinder fins-(blow out with air).
- Poor ventilation and ambient temperature is too high where the compressor is stored.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Parts List – EMAX Model : APP3Y0521T

No.	Part#	Part Description	Q'ty	No.	Part#	Part Description	Q'ty
1	RCZ100T001	Rear cover	1	35	COZ100T035	Cover	2
2	BRZ100T002	Breather	1	36	IVZ100T036	Inlet valve	2
3	BOZ100T003	Bolt	8	37	EVZ100T037	Exhaust valve	2
4	WAZ100T004	Washer	8	38	CBZ100T038	Copper backing	4
5	GAZ100T005	Gasket	2	39	ORZ100T039	O ring	4
6	OGZ100T006	Oil sight glass	1	40	AFZ100T040	Air filter	2
7	OPZ100T007	Oil drain pipe	1	41	CCZ100T041	Cylinder cover	2
8	DPZ100T008	Drain plug	1	42	ELZ100T042	Elbow	2
9	CCZ100T009	Crank case	1	43	WAZ100T043	Washer	12
10	BEZ100T010	Bearing	2	44	BOZ100T044	Bolt	12
11	CSZ100T011	Crank shaft	1	45	EPZ100T045	Exhaust pipe	2
12	OSZ100T012	Oil seal	1	46	TTZ100T046	T tee	1
13	FCZ100T013	Front cover	1	47	CCZ100T047	Cylinder cover	1
14	PUZ100T014	Pulley	1	48	COZ100T048	Cooler	1
15	NUZ100T015	Nut	1	49	ORZ100T049	O ring	2
16	WAZ100T016	Washer	1	50	CBZ100T050	Copper backing	2
17	BOZ100T017	Bolt	1	51	IVZ100T051	Inlet valve	1
18	BOZ100T018	Bond	1	52	EVZ100T052	Exhaust valve	1
19	SCZ100T019	Screw	3	53	CGZ100T053	Cylinder gasket	1
20	WAZ100T020	Washer	3	54	CYZ100T054	Cylinder	1
21	OSZ100T021	Oil splasher	2	55	PSZ100T055	Piston ring set	1
22	BBZ100T022	Bearing bush	6	56	WPZ100T056	Wrist pin	1
23	NUZ100T023	Nut	6	57	PIZ100T057	Piston	1
24	WAZ100T024	Washer	6	58	CLZ100T058	Clip	2
25	BOZ100T025	Bolt	6	59	CRZ100T059	Connecting rod	1
26	CRZ100T026	Connecting rod	2	60	OSZ100T060	Oil splasher (straight)	1
27	CLZ100T027	Clip	4	61	SPZ100T061	Spring	3
28	WPZ100T028	Wrist pin	2	62	PPZ100T062	Plunger piston	3
29	PIZ100T029	Piston	2	63	ORZ100T063	O ring	3
30	PSZ100T030	Piston ring set	2	64	HNZ100T064	Hold-down nut	5
31	CGZ100T031	Cylinder lower gasket	3	65	RRZ100T065	Retainer ring	5
32	WAZ100T032	Washer	12	66	TCZ100T066	T coupling	2
33	BOZ100T033	Bolt	12	67	ITZ100T067	Inlet unloading tube	2
34	CYZ100T034	Cylinder	2	68	LCZ100T068	L coupling	1